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Improve The Numeracy Skills Of Fifth-Grade Students Through Self-Efficacy In Elementary Schools

M. Ridwan[1], Muhammad Misbahudholam AR[2*], Fajar Budiyono[3], Tri Sukitman[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

A B S T R A K

Kemampuan numerasi merupakan dasar bagi peserta didik dalam mengerjakan penyelesaian masalah matematika dan merupakan salah satu dari indikator penilaian Asesmen Kompetensi Minimum. Pada tahun 2018 berdasarkan hasil PISA yang dirilis OECD tingkat literasi numerasi Indonesia berada pada peringkat 74 dari 79 negara, hal ini menunjukan bahwa tingkat literasi numerasi Indonesia masih sangat rendah. Penelitain ini bertujuan untuk mengetahui peningkatan kemampuan numerasi siswa kelas v melalui self-efficacy di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. responden dalam penelitian ini berjumlah 32 siswa kelas 5. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil penelitian menunjukkan bahwa *self-efiicacy* siswa dapat meningkatkan kemampuan numerasi secara signifikan dibuktikan dengan pengujian hipotesis menggunakan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan $α = 0{,}05$ diperoleh nilai sig sebesar $0{,}003 < α = 0{,}05$. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy.*

A B S T R A C T

Numerical ability is the basis for students in working on solving math problems and is one of the indicators for assessing the Minimum Competency Assessment. In 2018, based on the PISA results released by the OECD, Indonesia's numeracy literacy level was ranked 74th out of 79 countries; this shows that Indonesia's numeracy literacy level is still deficient. This study aims to determine the increase in the numeracy skills of fifth-grade students through self-efficacy in elementary schools. The type of research used is causal-comparative research, also known as ex-post facto research with a quantitative approach. Respondents in this study were 32 fifth-grade students. The research instruments used were self-efficacy questionnaires and numeracy ability test questions. Data analysis in this study used descriptive and inferential statistics in simple linear regression analysis. The study's results showed that students' self-efficacy could improve their numeracy skills significantly, as evidenced by testing the hypothesis using simple linear regression analysis. The results showed that at a significant level $α = 0.05$, a sig value of $0.003 < α = 0.05$ was obtained. Students' numeracy skills are influenced by student self-efficacy by 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy.

1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (AR et al., 2021; Sukitman & Ridwan, 2021; Zientek et al., 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching materials, learning methods, and media to the curriculum used (AR et al., 2021; Ridwan, 2018). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the

Corresponding author

E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi et al., 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk et al., 2020; Ridwan et al., 2022; Ridwan & Mulasih, 2022) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (AR & Hardiansyah, 2022; Armadi et al., 2022; Ugwuanyi et al., 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah et al., 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (Hardiansyah et al., 2022; van Aalderen‐Smeets et al., 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Hardiansyah & Mas'odi, 2022; Kohen et al., 2022; Ridwan et al., 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022c). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah et al., 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022a) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Aini & Ridwan, 2021; Sahendra et al., 2018; Zhou et al., 2020). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer et al., 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren et al., 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6%

(8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.

The 2018 PISA results of the OECD (2019) show that Indonesian students' average math score reaches 379, with an average OECD score of 487. This indicates that students' numeracy literacy skills in Indonesia still need to improve. In addition, the causes of the low numeracy ability of Indonesian students can be influenced by several different factors. The facts are that only a tiny portion utilizes numeracy literacy skills in everyday life. Students may have mastered the ability to count as a basic mathematical concept, but students' skills in using these concepts in natural conditions or when solving unstructured problems should be addressed. For example, in everyday life, the need for more practice on numeracy literacy questions. This is because many teachers are still unable to compile numeracy literacy questions, especially elementary school teachers, so students become more accustomed to solving these non-routine questions. Teachers tend to make routine questions that are closed and can be directly solved by using a formula (Hardiansyah & Mulyadi, 2022; Sukitman & Ridwan, 2021).

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by (Zulnaidi et al., 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at Lenteng Timur 1 elementary school which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Bicer et al., 2020; Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H et al., 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. This research was conducted at Lenteng Timur 1 Elementary School, Sumenep, with a population of all 32 Fifth-Grade Students.

$$X \longrightarrow Y$$

Figure 1. Research design "ex-post facto design"

Description:

X = Self-efficacy

Y = math problem solving ability

Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. There are 30 statements in the form of a self-efficacy questionnaire and six essay test items to measure the numeracy literacy skills

given to students. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories.

Table 1. Self-Efficacy Indicator

No	Self-Efficacy Indicator	Description
1	Magnitude	This indicator is about the selection of attitudes that students will carry out or avoid. Students will do things they feel capable of doing and avoid things considered difficult or beyond their limits.
2	Strenght	This indicator relates to the level of strength and weakness of students' beliefs about their abilities. Students with solid self-efficacy abilities tend never to give up and are tenacious in facing obstacles. Conversely, students with weak self-efficacy tend to be easily distracted by small barriers to completing their assignments.
3	Generality	This indicator is a dimension related to the breadth of knowledge in the field of tasks or completion carried out. In overcoming or solving problems, some students have little confidence in a certain way of solving them, and some can do it in various ways.

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

Table 2. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu+\sigma$
Medium	$\mu-\sigma \leq X < \mu+\sigma$
Low	$X < \mu-\sigma$

3. RESULT AND DISCUSSION

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 3. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78
Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 4. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
$X \geq 76,99$	High	3	9%
$56,81 < X < 76,99$	Medium	28	88%
$X \leq 56,81$	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored X ≥ 76.99 were three students with a percentage of 9%, which is classified as high, students who scored 56.81<X<76.99 were 28 students with a

rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 5. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 6. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 7. Normality Test Results *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution
Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 8. Cronbach Alpha Linearity Test Results

Deviation from Linierity				
Self-efficacy	and	F	Sig	Information
numeracy skills		1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 9. ANOVA Simple Linear Regression Test Results

ANOVA[a]				
Model	Sum of Squares	Mean Square	F	Sig
Regression	295,556	295,556	10,651	,003[b]
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

The above statement is in line with (Peranginangin et al., 2019; Sahendra et al., 2018; Sukitman & Ridwan, 2021); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari et al., 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher. Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level $\alpha = 0.05$, a sig value of $0.00 < \alpha = 0.05$ is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by

choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy. Students with high self-efficacy meet four indicators of numeracy literacy skills: the process of understanding problems, the process of modelling problems, the process of using concepts in solving problems, and the process of interpreting and evaluating situations. This shows that students in the high self-efficacy category have good numeracy literacy skills. Students in the moderate self-efficacy category fulfil three indicators of numeracy literacy skills: the process of understanding problems, modelling problems, and using concepts in solving problems. This shows that students in the moderate self-efficacy category have fairly good numeracy literacy skills. Meanwhile, students in the low self-efficacy category fulfil one indicator of numeracy literacy ability: understanding problems. These results show that low self-efficacy students have less numeracy literacy skills. In addition, the results of this study also show that the better the students' self-efficacy, the better their numeracy literacy skills.

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The Effect Of Self-Efficacy Capacity On Students' Numeracy Skills In Elementary School

M. Ridwan[1], Syaiful Bahri[2], Muhammad Misbahudholam AR[3*], Fajar Budiyono[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

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ARTICLE INFO

ABSTRAK

Penelitain ini bertujuan untuk mengetahui pengaruh *self-efficacy* terhadap kemampuan numerasi siswa kelas V di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. Penelitian ini dilaksanakan di sekolah dasar Lenteng Timur 1. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil pengujian hipotesis dengan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan α= 0,05 diperoleh nilai sig sebesar 0,003 < α = 0,05. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy*. Hasil penelitian ini menunjukkan bahwa *self-efiicacy* siswa memiliki pengaruh yang signifikan terhadap kemampuan numerasi siswa.

ABSTRACT

This research aims to determine the effect of self-efficacy on the numeracy skills of grade V students in elementary schools. The type of research used is causal-comparative research, also called ex-post facto research with a quantitative approach. This research was conducted at elemntary school Lenteng Timur 1. The research instruments used were a self-efficacy questionnaire and numeracy test questions. This study's data analysis used descriptive and inferential statistics in simple linear regression analysis. Based on the results of hypothesis testing with simple linear regression analysis obtained results, at a significant level α = 0.05 obtained sig value of 0.003 < α = 0.05. Students' numeracy skills are influenced by student self-efficacy by 51.2%. At the same time, 48.8% is influenced by other factors outside of self-efficacy. The results of this study indicate that student self-efficacy has a significant influence on student numeracy skills.

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1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (Zientek, Fong, & Phelps, 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching materials, learning methods, and media to the curriculum used (AR, Rasyid, & Ridwan, 2021). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi, AR, & Aini, 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk, Akkan, & Kaplan, 2020) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

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Corresponding author

E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (Ugwuanyi, Okeke, & Asomugha, 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah, Isnarto, & Rochmad, 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (van Aalderen‐Smeets, Walma van der Molen, & Xenidou‐Dervou, 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Kohen, Amram, Dagan, & Miranda, 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022a). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah, Muhammad Misbahudholam, & Hidayatillah, 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022c) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Sahendra, Budiarto, & Fuad, 2018). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer, Lee, Perihan, Capraro, & Capraro, 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren, Reilly, Herdan, & Lin, 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6% (8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by

(Zulnaidi, Heleni, & Syafri, 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at SDN Lenteng Timur 1 which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H, Febriati, & Ervianti, 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories. The categorization formula is seen in table 1 below.

Table 1. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu + \sigma$
Medium	$\mu - \sigma \leq X < \mu + \sigma$
Low	$X < \mu - \sigma$

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

3. RESULT AND DISCUSSION

Result

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 2. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78

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Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 3. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
X≥76,99	High	3	9%
56,81<X<76,99	Medium	28	88%
X≤56,81	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored X ≥ 76.99 were three students with a percentage of 9%, which is classified as high, students who scored 56.81<X<76.99 were 28 students with a rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 4. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 5. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 6. Hasil Uji Normalitas *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution

Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 7. Cronbach Alpha Linearity Test Results

Deviation from Linierity			
Self-efficacy and	F	Sig	Information
numeracy skills	1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 8. ANOVA Simple Linear Regression Test Results

ANOVA[a]				
Model	Sum of Squares	Mean Square	F	Sig
Regression	295,556	295,556	10,651	,003[b]
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

> **Commented [RV6]:** The discussion hopes to sharpen the meaning or interpretation of data results, compare with the findings of previous studies and then make generalizations, implications of research results, research limitations and recommendations
>
> As with the introduction, the discussion uses at least two citations in each statement to strengthen the presentation.

The above statement is in line with (Peranginangin, Saragih, & Siagian, 2019); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari, Amry, & Saragih, 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher.

Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level $\alpha = 0.05$, a sig value of $0.00 < \alpha = 0.05$ is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

> **Commented [RV7]:** It is conceptual in nature and can be a generalization of the results of research findings, capable of answering research problems.

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy.

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> **Commented [RV8]:** Add international references, use the APA guidelines 7th edition, references from journals please include the url and doi and make sure the url and doi are active

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The Effect Of Self-Efficacy Capacity On Students' Numeracy Skills In Elementary School

M. Ridwan[1], Syaiful Bahri[2], Muhammad Misbahudholam AR[3*], Fajar Budiyono[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

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ABSTRAK

Penelitain ini bertujuan untuk mengetahui pengaruh *self-efficacy* terhadap kemampuan numerasi siswa kelas V di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. Penelitian ini dilaksanakan di sekolah dasar Lenteng Timur 1. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil pengujian hipotesis dengan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan α= 0,05 diperoleh nilai sig sebesar 0,003 < α = 0,05. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy*. Hasil penelitian ini menunjukkan bahwa *self-efiicacy* siswa memiliki pengaruh yang signifikan terhadap kemampuan numerasi siswa.

ABSTRACT

This research aims to determine the effect of self-efficacy on the numeracy skills of grade V students in elementary schools. The type of research used is causal-comparative research, also called ex-post facto research with a quantitative approach. This research was conducted at elemntary school Lenteng Timur 1. The research instruments used were a self-efficacy questionnaire and numeracy test questions. This study's data analysis used descriptive and inferential statistics in simple linear regression analysis. Based on the results of hypothesis testing with simple linear regression analysis obtained results, at a significant level α = 0.05 obtained sig value of 0.003 < α = 0.05. Students' numeracy skills are influenced by student self-efficacy by 51.2%. At the same time, 48.8% is influenced by other factors outside of self-efficacy. The results of this study indicate that student self-efficacy has a significant influence on student numeracy skills.

1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (Zientek, Fong, & Phelps, 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching materials, learning methods, and media to the curriculum used (AR, Rasyid, & Ridwan, 2021). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi, AR, & Aini, 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk, Akkan, & Kaplan, 2020) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

Corresponding author

*E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (Ugwuanyi, Okeke, & Asomugha, 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah, Isnarto, & Rochmad, 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (van Aalderen‐Smeets, Walma van der Molen, & Xenidou‐Dervou, 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Kohen, Amram, Dagan, & Miranda, 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022a). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah, Muhammad Misbahudholam, & Hidayatillah, 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022c) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Sahendra, Budiarto, & Fuad, 2018). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer, Lee, Perihan, Capraro, & Capraro, 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren, Reilly, Herdan, & Lin, 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6% (8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by

(Zulnaidi, Heleni, & Syafri, 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at SDN Lenteng Timur 1 which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H, Febriati, & Ervianti, 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories. The categorization formula is seen in table 1 below.

Table 1. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu + \sigma$
Medium	$\mu - \sigma \leq X < \mu + \sigma$
Low	$X < \mu - \sigma$

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

3. RESULT AND DISCUSSION

Result

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 2. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78

Commented [RV9]: Please explain the method clearly and straightforwardly, the method can be described in four paragraphs which contain:
Type and research design (1 paragraph) can be supplemented with a design chart (supplemented with clear sources). Research subjects, who are involved in research. Data collection methods and instruments (the method used is complete with instrument grids and instrument validity tests). The method of analysis, the analysis carried out.

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Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 3. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
X≥76,99	High	3	9%
56,81<X<76,99	Medium	28	88%
X≤56,81	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored X ≥ 76.99 were three students with a percentage of 9%, which is classified as high, students who scored 56.81<X<76.99 were 28 students with a rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 4. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 5. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 6. Hasil Uji Normalitas *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution

Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 7. Cronbach Alpha Linearity Test Results

Deviation from Linierity			
Self-efficacy and numeracy skills	F	Sig	Information
	1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 8. ANOVA Simple Linear Regression Test Results

ANOVAa				
Model	Sum of Squares	Mean Square	F	Sig
Regression	295,556	295,556	10,651	,003b
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

> **Commented [RV12]:** Re-sharpen the meaning of research results, comparison with previous research, strengths, contributions, implications, research limitations.

The above statement is in line with (Peranginangin, Saragih, & Siagian, 2019); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari, Amry, & Saragih, 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher.

Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level $\alpha = 0.05$, a sig value of $0.00 < \alpha = 0.05$ is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy.

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Improve The Numeracy Skills Of Fifth-Grade Students Through Self-Efficacy In Elementary Schools

M. Ridwan[1], Muhammad Misbahudholam AR[2]*, Fajar Budiyono[3], Tri Sukitman[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

ARTICLE INFO

ABSTRAK

Kemampuan numerasi merupakan dasar bagi peserta didik dalam mengerjakan penyelesaian masalah matematika dan merupakan salah satu dari indikator penilaian Asesmen Kompetensi Minimum. Pada tahun 2018 berdasarkan hasil PISA yang dirilis OECD tingkat literasi numerasi Indonesia berada pada peringkat 74 dari 79 negara, hal ini menunjukan bahwa tingkat literasi numerasi Indonesia masih sangat rendah. Penelitain ini bertujuan untuk mengetahui peningkatan kemampuan numerasi siswa kelas v melalui self-efficacy di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. responden dalam penelitian ini berjumlah 32 siswa kelas 5. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil penelitian menunjukkan bahwa *self-efiicacy* siswa dapat meningkatkan kemampuan numerasi secara signifikan dibuktikan dengan pengujian hipotesis menggunakan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan α= 0,05 diperoleh nilai sig sebesar 0,003 < α = 0,05. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy.*

ABSTRACT

Numerical ability is the basis for students in working on solving math problems and is one of the indicators for assessing the Minimum Competency Assessment. In 2018, based on the PISA results released by the OECD, Indonesia's numeracy literacy level was ranked 74th out of 79 countries; this shows that Indonesia's numeracy literacy level is still deficient. This study aims to determine the increase in the numeracy skills of fifth-grade students through self-efficacy in elementary schools. The type of research used is causal-comparative research, also known as ex-post facto research with a quantitative approach. Respondents in this study were 32 fifth-grade students. The research instruments used were self-efficacy questionnaires and numeracy ability test questions. Data analysis in this study used descriptive and inferential statistics in simple linear regression analysis. The study's results showed that students' self-efficacy could improve their numeracy skills significantly, as evidenced by testing the hypothesis using simple linear regression analysis. The results showed that at a significant level α = 0.05, a sig value of 0.003 < α = 0.05 was obtained. Students' numeracy skills are influenced by student self-efficacy by 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy.

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> **Commented [RV2]:** add conclusion

> **Commented [RV3]:** The results are in line with the research objectives

1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (AR et al., 2021; Sukitman & Ridwan, 2021; Zientek et al., 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching materials, learning methods, and media to the curriculum used (AR et al., 2021; Ridwan, 2018). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the

Corresponding author

E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi et al., 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk et al., 2020; Ridwan et al., 2022; Ridwan & Mulasih, 2022) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (AR & Hardiansyah, 2022; Armadi et al., 2022; Ugwuanyi et al., 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah et al., 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (Hardiansyah et al., 2022; van Aalderen‑Smeets et al., 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Hardiansyah & Mas'odi, 2022; Kohen et al., 2022; Ridwan et al., 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022c). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah et al., 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022a) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Aini & Ridwan, 2021; Sahendra et al., 2018; Zhou et al., 2020). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer et al., 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren et al., 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6%

(8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.
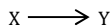
The 2018 PISA results of the OECD (2019) show that Indonesian students' average math score reaches 379, with an average OECD score of 487. This indicates that students' numeracy literacy skills in Indonesia still need to improve. In addition, the causes of the low numeracy ability of Indonesian students can be influenced by several different factors. The facts are that only a tiny portion utilizes numeracy literacy skills in everyday life. Students may have mastered the ability to count as a basic mathematical concept, but students' skills in using these concepts in natural conditions or when solving unstructured problems should be addressed. For example, in everyday life, the need for more practice on numeracy literacy questions. This is because many teachers are still unable to compile numeracy literacy questions, especially elementary school teachers, so students become more accustomed to solving these non-routine questions. Teachers tend to make routine questions that are closed and can be directly solved by using a formula (Hardiansyah & Mulyadi, 2022; Sukitman & Ridwan, 2021).

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by (Zulnaidi et al., 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at Lenteng Timur 1 elementary school which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Bicer et al., 2020; Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H et al., 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. This research was conducted at Lenteng Timur 1 Elementary School, Sumenep, with a population of all 32 Fifth-Grade Students.

$$X \longrightarrow Y$$

Figure 1. Research design "ex-post facto design"

Description:
X = Self-efficacy
Y = math problem solving ability

Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. There are 30 statements in the form of a self-efficacy questionnaire and six essay test items to measure the numeracy literacy skills

given to students. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories.

Table 1. Self-Efficacy Indicator

No	Self-Efficacy Indicator	Description
1	Magnitude	This indicator is about the selection of attitudes that students will carry out or avoid. Students will do things they feel capable of doing and avoid things considered difficult or beyond their limits.
2	Strenght	This indicator relates to the level of strength and weakness of students' beliefs about their abilities. Students with solid self-efficacy abilities tend never to give up and are tenacious in facing obstacles. Conversely, students with weak self-efficacy tend to be easily distracted by small barriers to completing their assignments.
3	Generality	This indicator is a dimension related to the breadth of knowledge in the field of tasks or completion carried out. In overcoming or solving problems, some students have little confidence in a certain way of solving them, and some can do it in various ways.

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

Table 2. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu + \sigma$
Medium	$\mu - \sigma \leq X < \mu + \sigma$
Low	$X < \mu - \sigma$

3. RESULT AND DISCUSSION

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 3. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78
Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 4. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
$X \geq 76,99$	High	3	9%
$56,81 < X < 76,99$	Medium	28	88%
$X \leq 56,81$	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored $X \geq 76.99$ were three students with a percentage of 9%, which is classified as high, students who scored $56.81 < X < 76.99$ were 28 students with a

rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 5. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 6. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 7. Normality Test Results *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution
Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 8. Cronbach Alpha Linearity Test Results

Deviation from Linierity				
Self-efficacy	and	F	Sig	Information
numeracy skills		1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 9. ANOVA Simple Linear Regression Test Results

Model	Sum of Squares	Mean Square	F	Sig
ANOVAᵃ				
Regression	295,556	295,556	10,651	,003ᵇ
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

The above statement is in line with (Peranginangin et al., 2019; Sahendra et al., 2018; Sukitman & Ridwan, 2021); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari et al., 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher. Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level $\alpha = 0.05$, a sig value of $0.00 < \alpha = 0.05$ is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by

> **Commented [RV4]:** Sharpen the strengths and implications of research

choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

> **Commented [RV5]:** The conclusion is enough to answer the problem or goal, or it can also produce a new theory/concept based on existing facts/analysis

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy. Students with high self-efficacy meet four indicators of numeracy literacy skills: the process of understanding problems, the process of modelling problems, the process of using concepts in solving problems, and the process of interpreting and evaluating situations. This shows that students in the high self-efficacy category have good numeracy literacy skills. Students in the moderate self-efficacy category fulfil three indicators of numeracy literacy skills: the process of understanding problems, modelling problems, and using concepts in solving problems. This shows that students in the moderate self-efficacy category have fairly good numeracy literacy skills. Meanwhile, students in the low self-efficacy category fulfil one indicator of numeracy literacy ability: understanding problems. These results show that low self-efficacy students have less numeracy literacy skills. In addition, the results of this study also show that the better the students' self-efficacy, the better their numeracy literacy skills.

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Improve The Numeracy Skills Of Fifth-Grade Students Through Self-Efficacy In Elementary Schools

M. Ridwan[1], Muhammad Misbahudholam AR[2*], Fajar Budiyono[3], Tri Sukitman[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

ABSTRAK

Kemampuan numerasi merupakan dasar bagi peserta didik dalam mengerjakan penyelesaian masalah matematika dan merupakan salah satu dari indikator penilaian Asesmen Kompetensi Minimum. Pada tahun 2018 berdasarkan hasil PISA yang dirilis OECD tingkat literasi numerasi Indonesia berada pada peringkat 74 dari 79 negara, hal ini menunjukan bahwa tingkat literasi numerasi Indonesia masih sangat rendah. Penelitain ini bertujuan untuk mengetahui peningkatan kemampuan numerasi siswa kelas v melalui self-efficacy di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. responden dalam penelitian ini berjumlah 32 siswa kelas 5. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil penelitian menunjukkan bahwa *self-efiicacy* siswa dapat meningkatkan kemampuan numerasi secara signifikan dibuktikan dengan pengujian hipotesis menggunakan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan α= 0,05 diperoleh nilai sig sebesar 0,003 < α = 0,05. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy.*

ABSTRACT

Numerical ability is the basis for students in working on solving math problems and is one of the indicators for assessing the Minimum Competency Assessment. In 2018, based on the PISA results released by the OECD, Indonesia's numeracy literacy level was ranked 74th out of 79 countries; this shows that Indonesia's numeracy literacy level is still deficient. This study aims to determine the increase in the numeracy skills of fifth-grade students through self-efficacy in elementary schools. The type of research used is causal-comparative research, also known as ex-post facto research with a quantitative approach. Respondents in this study were 32 fifth-grade students. The research instruments used were self-efficacy questionnaires and numeracy ability test questions. Data analysis in this study used descriptive and inferential statistics in simple linear regression analysis. The study's results showed that students' self-efficacy could improve their numeracy skills significantly, as evidenced by testing the hypothesis using simple linear regression analysis. The results showed that at a significant level α = 0.05, a sig value of 0.003 < α = 0.05 was obtained. Students' numeracy skills are influenced by student self-efficacy by 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy.

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1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (AR et al., 2021; Sukitman & Ridwan, 2021; Zientek et al., 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching materials, learning methods, and media to the curriculum used (AR et al., 2021; Ridwan, 2018). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the

Corresponding author

E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi et al., 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk et al., 2020; Ridwan et al., 2022; Ridwan & Mulasih, 2022) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (AR & Hardiansyah, 2022; Armadi et al., 2022; Ugwuanyi et al., 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah et al., 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (Hardiansyah et al., 2022; van Aalderen‐Smeets et al., 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Hardiansyah & Mas'odi, 2022; Kohen et al., 2022; Ridwan et al., 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022c). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah et al., 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022a) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Aini & Ridwan, 2021; Sahendra et al., 2018; Zhou et al., 2020). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer et al., 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren et al., 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6%

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(8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.

The 2018 PISA results of the OECD (2019) show that Indonesian students' average math score reaches 379, with an average OECD score of 487. This indicates that students' numeracy literacy skills in Indonesia still need to improve. In addition, the causes of the low numeracy ability of Indonesian students can be influenced by several different factors. The facts are that only a tiny portion utilizes numeracy literacy skills in everyday life. Students may have mastered the ability to count as a basic mathematical concept, but students' skills in using these concepts in natural conditions or when solving unstructured problems should be addressed. For example, in everyday life, the need for more practice on numeracy literacy questions. This is because many teachers are still unable to compile numeracy literacy questions, especially elementary school teachers, so students become more accustomed to solving these non-routine questions. Teachers tend to make routine questions that are closed and can be directly solved by using a formula (Hardiansyah & Mulyadi, 2022; Sukitman & Ridwan, 2021).

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by (Zulnaidi et al., 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at Lenteng Timur 1 elementary school which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Bicer et al., 2020; Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H et al., 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. This research was conducted at Lenteng Timur 1 Elementary School, Sumenep, with a population of all 32 Fifth-Grade Students.

$$X \longrightarrow Y$$

Figure 1. Research design "ex-post facto design"

Description:
X = Self-efficacy
Y = math problem solving ability

Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. There are 30 statements in the form of a self-efficacy questionnaire and six essay test items to measure the numeracy literacy skills

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given to students. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories.

Table 1. Self-Efficacy Indicator

No	Self-Efficacy Indicator	Description
1	Magnitude	This indicator is about the selection of attitudes that students will carry out or avoid. Students will do things they feel capable of doing and avoid things considered difficult or beyond their limits.
2	Strenght	This indicator relates to the level of strength and weakness of students' beliefs about their abilities. Students with solid self-efficacy abilities tend never to give up and are tenacious in facing obstacles. Conversely, students with weak self-efficacy tend to be easily distracted by small barriers to completing their assignments.
3	Generality	This indicator is a dimension related to the breadth of knowledge in the field of tasks or completion carried out. In overcoming or solving problems, some students have little confidence in a certain way of solving them, and some can do it in various ways.

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

Table 2. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu + \sigma$
Medium	$\mu - \sigma \leq X < \mu + \sigma$
Low	$X < \mu - \sigma$

3. RESULT AND DISCUSSION

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 3. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78
Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 4. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
$X \geq 76,99$	High	3	9%
$56,81 < X < 76,99$	Medium	28	88%
$X \leq 56,81$	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored $X \geq 76.99$ were three students with a percentage of 9%, which is classified as high, students who scored $56.81 < X < 76.99$ were 28 students with a

rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 5. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 6. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 7. Normality Test Results *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution
Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 8. Cronbach Alpha Linearity Test Results

Deviation from Linierity				
Self-efficacy	and	F	Sig	Information
numeracy skills		1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 9. ANOVA Simple Linear Regression Test Results

Model	Sum of Squares	Mean Square	F	Sig
	ANOVAᵃ			
Regression	295,556	295,556	10,651	,003ᵇ
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

The above statement is in line with (Peranginangin et al., 2019; Sahendra et al., 2018; Sukitman & Ridwan, 2021); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari et al., 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher. Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level α = 0.05, a sig value of 0.00 <α = 0.05 is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by

choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy. Students with high self-efficacy meet four indicators of numeracy literacy skills: the process of understanding problems, the process of modelling problems, the process of using concepts in solving problems, and the process of interpreting and evaluating situations. This shows that students in the high self-efficacy category have good numeracy literacy skills. Students in the moderate self-efficacy category fulfil three indicators of numeracy literacy skills: the process of understanding problems, modelling problems, and using concepts in solving problems. This shows that students in the moderate self-efficacy category have fairly good numeracy literacy skills. Meanwhile, students in the low self-efficacy category fulfil one indicator of numeracy literacy ability: understanding problems. These results show that low self-efficacy students have less numeracy literacy skills. In addition, the results of this study also show that the better the students' self-efficacy, the better their numeracy literacy skills.

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Improve The Numeracy Skills Of Fifth-Grade Students Through Self-Efficacy In Elementary Schools

M. Ridwan[1], Muhammad Misbahudholam AR[2*], Fajar Budiyono[3], Tri Sukitman[4]

[1,2,3,4] Primary Teacher Education Study Program, STKIP PGRI, Sumenep, Indonesia

A B S T R A K

Kemampuan numerasi merupakan dasar bagi peserta didik dalam mengerjakan penyelesaian masalah matematika dan merupakan salah satu dari indikator penilaian Asesmen Kompetensi Minimum. Pada tahun 2018 berdasarkan hasil PISA yang dirilis OECD tingkat literasi numerasi Indonesia berada pada peringkat 74 dari 79 negara, hal ini menunjukan bahwa tingkat literasi numerasi Indonesia masih sangat rendah. Penelitian ini bertujuan untuk meningkatkan kemampuan numerasi siswa kelas v melalui self-efficacy di sekolah dasar. Jenis penelitian yang digunakan adalah *causal comparative research* disebut juga penelitian *ex-post facto* dengan pendekatan kuantitatif. responden dalam penelitian ini berjumlah 32 siswa kelas 5. Instrumen penelitian yang digunakan berupa angket *self-efficacy* dan soal tes kemampuan numerasi. Analisis data dalam penelitian ini menggunkanan statistik deskriptif dan statistik inferensial berupa analisis regresi linier sederhana. Berdasarkan hasil penelitian menunjukkan bahwa *self-efiicacy* siswa dapat meningkatkan kemampuan numerasi secara signifikan dibuktikan dengan pengujian hipotesis menggunakan analisis regresi linier sederhana diperoleh hasil, pada taraf signifikan α= 0,05 diperoleh nilai sig sebesar 0,003 < α = 0,05. Kemampuan numerasi siswa dipengaruhi oleh *self-efficacy* siswa sebesar 51,2%. Sedangkan 48,8% dipengaruhi oleh faktor lain diluar *self-efficacy.* Hasil penelitian ini juga menunjukkan bahwa semakin baik efikasi diri siswa maka kemampuan literasi berhitungnya akan semakin baik.

A B S T R A C T

Numerical ability is the basis for students in working on solving math problems and is one of the indicators for assessing the Minimum Competency Assessment. In 2018, based on the PISA results released by the OECD, Indonesia's numeracy literacy level was ranked 74th out of 79 countries; this shows that Indonesia's numeracy literacy level is still deficient. This study aims to improve the numeracy skills of fifth-grade students through self-efficacy in elementary schools. The type of research used is causal-comparative research, also known as ex-post facto research with a quantitative approach. Respondents in this study were 32 fifth-grade students. The research instruments used were self-efficacy questionnaires and numeracy ability test questions. Data analysis in this study used descriptive and inferential statistics in simple linear regression analysis. The study's results showed that students' self-efficacy could improve their numeracy skills significantly, as evidenced by testing the hypothesis using simple linear regression analysis. The results showed that at a significant level α = 0.05, a sig value of 0.003 < α = 0.05 was obtained. Students' numeracy skills are influenced by student self-efficacy by 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. The results of this study also show that the better the students' self-efficacy, the better their numeracy literacy skills.

1. INTRODUCTION

The rapid development of technology in the current era is directly proportional to the education progress in Indonesia. Globalization has been very pronounced in human life, ranging from ideology, politics, economics, and socio-culture (AR et al., 2021; Sukitman & Ridwan, 2021; Zientek et al., 2019). Therefore, many things are done to improve Indonesia's education system, ranging from teaching

Corresponding author

E-mail addresses: misbahudholam@stkippgrisumenep.ac.id

materials, learning methods, and media to the curriculum used (AR et al., 2021; Ridwan, 2018). Of course, it is not easy to find the right formula in the field of education; many aspects must be met to improve the shortcomings of the existing system. However, in this day and age, with the ever-evolving technology and the more modern mindset of Generation Z, it is necessary to foster the psychological aspects to channel their skills (Armadi et al., 2022). Schools have a vital role in optimizing the learning process so that it has an impact on achieving national learning goals (AR & Hardiansyah, 2022). In line with this, (Öztürk et al., 2020; Ridwan et al., 2022; Ridwan & Mulasih, 2022) explained that self-efficacy and learning habits are psychological factors that significantly influence determining student learning outcomes. Self-efficacy acts as a driving force, while study habits are a strategy for obtaining good learning outcomes (Damrongpanit, 2019).

Students' lack of confidence in expressing and demonstrating their skills in the classroom is still a significant problem in classroom learning (AR & Hardiansyah, 2022; Armadi et al., 2022; Ugwuanyi et al., 2020). The social environment and the student's background influence the students' personalities and self-confidence (Fonna & Mursalin, 2018). External factors (family, school, community) can significantly affect the development of children's talents, interests, and abilities (Taubah et al., 2018). In addition, as students get older, their education level will affect the self-confidence that students must have to adjust to their academic environment. Therefore, understanding and forming self-efficacy in the learning process in the classroom is needed by students (Hardiansyah & Mulyadi, 2022). Self-efficacy is a person's belief about his chances to succeed in performing specific tasks (Hardiansyah & Zainuddin, 2022). Self-efficacy is a personal factor that distinguishes each individual, and changes in self-efficacy can cause changes in behavior, especially in completing tasks and goals (In'am & Sutrisno, 2021). Individuals with high self-efficacy will devote all their efforts and attention according to the demands of the situation to achieving predetermined goals and performance. If they fail to achieve a target goal, individuals with self-efficacy will try harder to achieve it again, overcome the obstacles that make them fail and set better targets (Ulinnuha & Rochmad, 2021). It is different if individuals with lower self-efficacy will set lower targets, and confidence in achieving targets is also low so that the efforts made are not maximized (Hardiansyah et al., 2022; van Aalderen‐Smeets et al., 2019).

Self-efficacy is an individual's belief that they can do something in a particular situation well (Hardiansyah & Mas'odi, 2022; Kohen et al., 2022; Ridwan et al., 2022). This also impacts an individual's mindset and attitude, especially in making decisions, the efforts made, and the persistence in facing all obstacles faced (Hardiansyah, 2022c). In addition, with self-efficacy, an individual can control their social environment. This is also because the development of a person is essentially from birth to adulthood and cannot be separated from society (Hardiansyah & AR, 2022). Building educational patterns early is essential as a foundation for the next level. Many factors can be considered to implement learning processes and patterns applied to elementary school students, especially in mathematics subjects (Hardiansyah et al., 2022). This is because science is proliferating, including in mathematics education. Primarily, mathematics is essential in advancing science and technology (Hardiansyah, 2022b). Therefore, students' interests must be read and fostered from the start to become students' skills in the future, especially in mathematics. It is not without reason that math is still fairly complex for students to understand. (Hardiansyah, 2022a) explained that in math lessons, there are still many obstacles that result in students being less successful in participating in learning.

The main obstacles in math lessons often come from the students themselves (psychological factors) and the teacher's explanation in delivering the material, especially those containing mathematical symbols that cannot be found in everyday life (Aini & Ridwan, 2021; Sahendra et al., 2018; Zhou et al., 2020). That a person's social environment becomes an example and learning for children. Students' ability in mathematics is needed because it is needed in everyday life and the next level of education (Bicer et al., 2020). Therefore, learning as a transformational effort to reconstruct students' attitudes and perspectives to face other challenges is expected to be well realized (Warren et al., 2021). Mathematics learning at the elementary school level, especially students' numeracy skills, must be continuously improved. This is because children's growth and development at school will begin to tread critical thinking and be more creative and innovative in high grades. Students in this phase have begun to be taught to recognize things in the surrounding environment, especially those related to everyday life so that the subject matter presented is not abstract and meaningful to students. The emphasis on learning success can be seen in the process and final result/learning outcome aspects (Masitoh & Fitriyani, 2018). In line with this, (Zhou et al., 2020) explained that numeracy skills contribute significantly to individual and community life. Students' numeracy skills reflect how the numeracy learning process is provided at school. The level of achievement in literacy skills of Indonesian students is only below the score of 400, with cognitive abilities that can only reach the ability to apply and analyze (Stacey in Sari and Putri, 2018). These results are reinforced by the acquisition of mathematical literacy based on the results of the 2015 PISA study that

Indonesia only achieved a percentage achievement (average percentage of PISA participants) of 30.7% (14.9%) for level 1; 19.6% (22.5%) for level 2; 8.4% (24.8%) for level 3; 2.7% (18.6%) for level 4; 0.6% (8.4%) for level 5 and; 0.1% (2.3%) for level 6 (OECD, 2016). These results show that Indonesian students only excel in level 1 mathematical literacy.

The 2018 PISA results of the OECD (2019) show that Indonesian students' average math score reaches 379, with an average OECD score of 487. This indicates that students' numeracy literacy skills in Indonesia still need to improve. In addition, the causes of the low numeracy ability of Indonesian students can be influenced by several different factors. The facts are that only a tiny portion utilizes numeracy literacy skills in everyday life. Students may have mastered the ability to count as a basic mathematical concept, but students' skills in using these concepts in natural conditions or when solving unstructured problems should be addressed. For example, in everyday life, the need for more practice on numeracy literacy questions. This is because many teachers are still unable to compile numeracy literacy questions, especially elementary school teachers, so students become more accustomed to solving these non-routine questions. Teachers tend to make routine questions that are closed and can be directly solved by using a formula (Hardiansyah & Mulyadi, 2022; Sukitman & Ridwan, 2021).

Previous research on self-efficacy conducted by (Istikomah, 2021) with the title "Mathematical Literacy Ability of Madrasah Ibtidaiyah Students in View of Self-Efficacy" which uses a quantitative experimental method to know the mathematical literacy ability of grade 5 madrasah ibtidaiyah in terms of self-efficacy by applying HOTS-oriented discovery learning. Through this research, it is known that there is a real influence of students' self-efficacy on the mathematical literacy skills of fifth-grade students of Madrasah Ibtidaiyah with HOTS-oriented Discovery Learning. The following research was conducted by (Zulnaidi et al., 2021) with the title "Analysis of Numeracy Literacy Skills and Student Self-Efficacy in Realistic Mathematics Learning" using design research, this study aims to obtain an overview of numeracy literacy skills and student self-efficacy in practical mathematics learning. Based on this study, it is known that most students' numeracy literacy skills improved significantly in practical mathematics learning (PMR). The students' self-efficacy level was also in the medium category both in the preliminary design phase and the retrospective analysis phase in learning and solving numeracy literacy problems on the numeracy ability post-test, in contrast to this study which focuses on knowing the effect of self-efficacy on numeracy skills in general in fifth-grade elementary school students at Lenteng Timur 1 elementary school which uses quantitative research methods.

The numeracy skills students will be instrumental in solving practically various problems faced in everyday life. (Simamora & Saragih, 2019) explained that numeracy skills are knowledge and skills in using various numbers and symbols related to basic mathematics to solve daily life problems and analyze information displayed in various forms (graphs, tables, charts, etc.). Finally, students are expected to be able to collaborate the skills and self-efficacy possessed by students to become individuals who can solve the problems they face (Bicer et al., 2020; Hardiansyah & Mas'odi, 2022). In particular, in the end, students can have mathematical self-efficacy, which is one of the affective aspects that play a role in the success of learning mathematics. In detail, self-efficacy can be defined as an individual's belief in their ability to build and implement special programs to solve problems or complete tasks (Nurhikmah H et al., 2021). In addition, the ability in mathematical reasoning has a significant role in the problem-solving process, starting from understanding the problem at hand, forming relationships (correlations), and conceptual representations between the problem at hand and prior knowledge. Based on the above explanation, research on the effect of self-efficacy on students' numeracy skills is exciting and necessary to do. Therefore, this study will explore and describe 1) the influence of self-efficacy on the numeracy skills of grade V students and 2) how much self-efficacy affects the numeracy skills of grade V students.

2. METHOD

This research uses a quantitative approach, with the type of ex-post facto research. This type of ex-post facto research is used in this study to determine the impact that occurs from variable conditions by deciding or defining the causes that have occurred in the variable, whether related or not. This research was conducted at Lenteng Timur 1 Elementary School, Sumenep, with a population of all 32 Fifth-Grade Students.

Data collection techniques were used in this study, namely using questionnaires for the independent variable, self-efficacy and for the dependent variable, which aims to determine numeracy skills by giving tests on numeracy skills and supported by field documentation. There are 30 statements in the form of a self-efficacy questionnaire and six essay test items to measure the numeracy literacy skills given to students. The questionnaire instrument to measure student self-efficacy was by students; the data is analyzed by making a frequency distribution table to describe the frequency of self-efficacy variables and categorize self-efficacy variables into high, medium and low categories.

Table 1. Self-Efficacy Indicator

No	Self-Efficacy Indicator	Description
1	Magnitude	This indicator is about the selection of attitudes that students will carry out or avoid. Students will do things they feel capable of doing and avoid things considered difficult or beyond their limits.
2	Strenght	This indicator relates to the level of strength and weakness of students' beliefs about their abilities. Students with solid self-efficacy abilities tend never to give up and are tenacious in facing obstacles. Conversely, students with weak self-efficacy tend to be easily distracted by small barriers to completing their assignments.
3	Generality	This indicator is a dimension related to the breadth of knowledge in the field of tasks or completion carried out. In overcoming or solving problems, some students have little confidence in a certain way of solving them, and some can do it in various ways.

After making the frequency distribution table and statistical calculations, categorization is carried out for variables X and Y. To measure students' self-efficacy and numeracy skills, the categorization consists of high, medium, and low. The hypothesis test/analysis used, namely simple linear regression, is intended to determine how much influence between the independent variable (independent) and the dependent variable (dependent) (Sugiyono, 2019: 260). Regression is useful for predicting the dependent variable (Y) if the independent variable (X) is known in this study using SPSS version 25 to conduct a simple linear regression analysis to determine the effect of self-efficacy on student numeracy skills.

Table 2. Self-efficacy categorization

Category	Intervals
High	$X \geq \mu + \sigma$
Medium	$\mu - \sigma \leq X < \mu + \sigma$
Low	$X < \mu - \sigma$

3. RESULT AND DISCUSSION

The results of the self-efficacy questionnaire of class V students, after being processed, obtained the following data;

Table 3. Descriptive Statistical Value of Student Self-efficacy Questionnaire Results

Self-efficacy	
Number of samples	32
Lowest score	54
Highest score	78
Average	68,5
Standard deviation	390
Variance	152101,5

The descriptive statistics of the self-efficacy questionnaire results in table 4.2 above show that the highest score obtained from 32 fifth-grade students of Lenteng timur 1 elementary school is 78, and the lowest score is 54. The average score of the self-efficacy questionnaire of grade V students of elementary school lenteng timur 1 is 68.5, with a standard deviation of 390 and a variance of 152101.5. To provide a clear picture of the level of self-efficacy in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the results of research on self-efficacy as in the table below;

Table 4. Self-efficacy frequency distribution

Intervals	Category	Frequency	Percentage
$X \geq 76,99$	High	3	9%
$56,81 < X < 76,99$	Medium	28	88%
$X \leq 56,81$	Low	1	3%
Amount		32	100%

In the Self-efficacy distribution table, students who scored X ≥ 76.99 were three students with a percentage of 9%, which is classified as high, students who scored 56.81<X<76.99 were 28 students with a rate of 88%, which is classified as moderate and students who scored X≤56.81 were one student with a percentage of 3%, which is classified as low. So, it can be concluded that the level of self-efficacy of

students in class V of Lenteng timur 1 elementary school is classified as moderate, with a percentage of 88%. The results of the numeracy ability test for class V students obtained the following data;

Table 5. Descriptive Statistical Value of Numeracy Ability Test Results

Self-efficacy	
Number of samples	32
Lowest score	60
Highest score	94
Average	74,4
Standard deviation	73,85
Variance	5455

The descriptive statistics of the numeracy test results of grade V students of Lenteng timur 1 elementary school in the table above show that the highest score obtained from 32 students of grade V of Lenteng timur 1 elementary school is 94, and the lowest score is 60. The average score of the self-efficacy questionnaire of grade V students of Lenteng timur 1 elementary school is 74.4, with a standard deviation of 73.85 and a variance of 5455. To make it easier for researchers to provide a clear picture of the level of numeracy skills in grade V students of Lenteng timur 1 elementary school in this study, researchers try to include a description of the research results on numeracy skills in the table below;

Table 6. Frequency distribution Numeracy capability

Intervals	Category	Frequency	Percentage
X≥76,99	High	5	15%
56,81<X<76,99	Medium	27	85%
X≤56,81	Low	0	0%
Amount		32	100%

The table above shows that students who scored X≥81.95 were five students with a percentage of 15%, which is classified as high; students who scored 55.45<X<81.95 were 27 students with a rate of 85%, which is classified as medium and students who scored X≤55.45 were 0 students with a percentage of 0%, which is classified as low. So, it can be concluded that the most effective rate of the numeracy competency level of 32 grade V students of Lenteng timur 1 elementary school is in the high category.

The normality test was carried out on the results of the Self-efficacy questionnaire and the numeracy test data of grade V students of Lenteng timur 1 elementary school. Data normality testing is used to determine whether the data is normally distributed, with the decision-making criteria being if the significance is <0.05, then the data is abnormal, and if the importance is >0.05, then the data is usually distributed. The test used is the one-sample kolmogorov-smirnov test with the help of SPSS 25; the results are as follows;

Table 7. Normality Test Results *One Sample Kolmogorov-Smirnov*

Instrument	N	Significance	Significant Level	Information
Questionnaire	32	0,088	0,05	Normal distribution
Test	32	0,123	0,05	Normal distribution

The normality test results using the one sample kolmogorov-smirnov test method on the data from the self-efficacy questionnaire obtained a significant value for 0.08>0.05, so it is usually distributed, while on the numeracy test data received a considerable deal of 0.12>0.05 normally distributed. This means that the research data in the form of self-efficacy questionnaires and numeracy tests come from a population whose distribution of research data is usually distributed, so they can continue to the next stage by using paramertis statistics. In addition to the normality test, a linearity test was also conducted. In general, the linearity test determines whether two variables have a significant linear relationship. Good data should have a linear relationship between variable X and variable Y; several references state that the linearity test is required before the linear regression test is carried out. A test carried out must be guided by the basis for decision-making in the linearity test; namely, if the significance value is more significant than 0.05, then the conclusion is that there is a linear relationship between variable X and variable Y. Conversely, if the significance value is less than 0.05, then the decision is that there is no linear relationship between variable X and variable Y. The linearity test results can be seen below;

Table 8. Cronbach Alpha Linearity Test Results

Deviation from Linierity			
Self-efficacy and	F	Sig	Information
numeracy skills	1,275	0,4322	Linier

The linearity test results in the ANOVA table show that the F price in Deviation from Linearity is 1.275 with a significance of 0.4322, so it is concluded that the significant value is > 0.05. So self-efficacy

and numeracy skills are linear. This means that if it has a positive linear relationship or correlation. Then if one variable increases, the other variable will increase, and vice versa.

Hypothesis testing using simple linear regression test. A simple Linear Regression Test aims to determine the effect of each variable, namely the impact of self-efficacy on students' numeracy skills, using the regression equation. To test the magnitude of the impact of self-efficacy on numeracy skills, simple regression analysis is used using statistical analysis techniques contained in the SPSS 25 program to answer the formulation of the problem, is there an effect of self-efficacy on the numeracy skills of grade V students of Lenteng timur 1 elementary school, in the following table;

Table 9. ANOVA Simple Linear Regression Test Results

ANOVAᵃ				
Model	Sum of Squares	Mean Square	F	Sig
Regression	295,556	295,556	10,651	,003ᵇ
Residual	832,444	27,748		
Amount	112.000			

The simple linear regression test results show that in the ANOVA table, the value of Fcount = 10.651 with a significance level of 0.003 <0.05. So the regression model can be used to predict the self-efficacy variable, or in other words, the self-efficacy variable (X) influences the mathematical communication ability variable (Y). This means that the results of this simple linear regression test can be interpreted that Ha, which states Self-efficacy has a positive effect on numeracy skills, is accepted, and Ho is rejected. Based on the results of hypothesis testing that researchers have carried out, it is obtained that Ha is accepted and Ho is rejected. The type of research used is causal-comparative or comparative causal research, also called ex post facto research. This research was conducted by giving self-efficacy questionnaires and numeracy tests to 32 students of elementary school Lembung Timur. The self-efficacy questionnaire consists of 10 statement items, while the trial of students' numeracy skills in mathematics subjects is in the form of an essay of 10 numbers.

Discussion

The results of the numeracy test given to grade V students of Lembung Timur elementary school obtained that the numeracy skills of quality V students of Lembung Timur elementary school are in the medium category, and the results of the self-efficacy questionnaire obtained, that the level of self-efficacy of grade V students of Lembung Timur elementary school is also in the medium category. This is to the facts obtained from the class teacher's statement, namely that during the teaching process, some students are still shy when asked to answer and express opinions from questions given by the teacher, and it is not uncommon for them just to be silent and listen to explanations from the teacher, and some are even cool by themselves during learning. But there are also most students; when learning takes place, these students are active in answering and expressing their opinions or being able to explain what has been learned, even if only in simple terms.

The above statement is in line with (Peranginangin et al., 2019; Sahendra et al., 2018; Sukitman & Ridwan, 2021); when performing various tasks, people with high self-efficacy serve very well. Those with high self-efficacy happily accept challenges. People with low self-efficacy must consider how well they cope with complex tasks. When facing difficult charges, they are slow to improve or regain their self-efficacy when faced with failure. The research results also support this by (Ulandari et al., 2019); students who have good enough confidence will always try to understand the material to complete the assignments given by the teacher. Based on the regression equation obtained between self-efficacy and numeracy skills has a positive correlation, which means that the higher the level of self-efficacy, the higher the numeracy skills of students. In line with the opinion of (Hardiansyah & Mulyadi, 2022), that self-efficacy for mathematical literacy in students can be changed and improved, namely, by using the right learning strategy, one of which is learning that involves active students and increases mathematical thinking so that it allows students to learn optimally. This is also in line with the results of (Taubah et al., 2018); the high and low self-efficacy of a person will affect the level of success in overcoming mathematical problems.

The results of the student self-efficacy hypothesis test have a significant effect on students' numeracy abilities. At a considerable level α = 0.05, a sig value of 0.00 <α = 0.05 is obtained. That is, students' self-efficacy has a significant influence on students' numeracy abilities. It is known that the value of the R square is 0.512. This can be interpreted that the variability of students' numeracy skills is influenced by student self-efficacy of 51.2%. Meanwhile, 48.8% is influenced by other factors besides self-efficacy. In Bandura's opinion quoted (Ulinnuha & Rochmad, 2021), self-efficacy affects a person by choosing actions, effort, and persistence. The action factor is a significant factor as a source of forming one's self-efficacy because it is based on the fact that one's success in carrying out a particular task or skill

will increase self-efficacy. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is partly influenced by self-efficacy. Students with high self-efficacy tend to select complex tasks because they contain more challenges than individuals with low self-efficacy.

Self-efficacy determines how much effort an individual makes and how long the individual will persevere when facing obstacles and unpleasant experiences. Individuals with solid self-efficacy are more active, passionate, and diligent in their efforts to master challenges. Individuals who are unsure of their abilities reduce their actions or even give up when faced with obstacles. In carrying out the research, students with high self-efficacy tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low self-efficacy tend to be inattentive in working on questions and do sober questions, such as only writing half of the answers or not completing them; there are even questions that still need to be answered. This shows that students with high self-efficacy have higher interest or engagement than students with low self-efficacy.

One of the research implementations that has been carried out is using a test instrument for the Y variable, namely numeracy ability. The results of the tests given to students were in the medium category, indicating that they could understand the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to problems, but changing the mathematical model still needs to be corrected. In calculating associated with the volume of geometric shapes, students answered correctly according to their understanding, but they were still required to provide a conclusion at the end of the answer. While the acquisition of test results given to students is in the high category, students have understood the story questions coherently but not in their language (copying from the questions). In addition, students have also been able to make questions related to the problem, change the mathematical model correctly related to calculating the volume of a geometric shape, give the correct answer according to student understanding, and provide conclusions at the end of the solution.

4. CONCLUSION

Some descriptions of the results and discussion of this study can be concluded; first, the influence of self-efficacy on students' numeracy skills impacts students' success in participating in class learning because students who have high self-efficacy will tend to give a positive response by being more active when participating in learning and doing an exercise given by the teacher well. Conversely, low self-efficacy students tend to be passive and work on sober exercise questions. Second, it shows that students with high self-efficacy have a higher interest or interest than students with low self-efficacy. Students with high self-efficacy meet four indicators of numeracy literacy skills: the process of understanding problems, the process of modelling problems, the process of using concepts in solving problems, and the process of interpreting and evaluating situations. This shows that students in the high self-efficacy category have good numeracy literacy skills. Students in the moderate self-efficacy category fulfil three indicators of numeracy literacy skills: the process of understanding problems, modelling problems, and using concepts in solving problems. This shows that students in the moderate self-efficacy category have fairly good numeracy literacy skills. Meanwhile, students in the low self-efficacy category fulfil one indicator of numeracy literacy ability: understanding problems. These results show that low self-efficacy students have less numeracy literacy skills. In addition, the results of this study also show that the better the students' self-efficacy, the better their numeracy literacy skills.

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Singaraja, 27 Maret 2023

LETTER OF ACCEPTANCE
Ref. No. 1016/JISD/III/2023

Dear Authors,

Based on the recommendations from reviewers, I am delighted to inform you that the following manuscript has been **ACCEPTED** for the publication in **Jurnal Ilmiah Sekolah Dasar** and the manuscript will be published In **SettingsVol. 8 No. 3 (2023): Agustus**

Manuscript ID	58660
Title	Improve The Numeracy Skills Of Fifth-Grade Students Through Self-Efficacy In Elementary Schools
Authors	M. Ridwan, Muhammad Misbahudholam AR, Fajar Budiyono, Tri Sukitman

Thank you for your contribution to the Jurnal Ilmiah Sekolah Dasar**.** We look forward to receiving further submission from you.

Best Regards,

Dr. I Wayan Widiana, S.Pd., M.Pd.
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